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Diffusion of Macromolecules and Water Molecules in Dilute Aqueous Solutions of Polyethylene Oxide

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Abstract

The concentration dependences of the self-diffusion coefficients of water molecules Daq(c) and polyethylene oxide macromolecules Dp(c) in aqueous solution are discussed. In the region of dilute solutions, the Daq(c) dependences are determined by the interaction of water molecules with polyethylene oxide oxygen atoms, and the Dp(c) dependences, by the interaction of polymer macromolecules with each other. These dependences are exponential functions of volume concentrations.